

NOTICE

All drawings located at the end of the document.

JEFFERSON COUNTY REMEDY LANDS

SEMI-ANNUAL REPORT

WINTER 1996

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ENVIRONMENTAL RESTORATION PROGRAM DIVISION

U.S. DEPARTMENT OF ENERGY

Rocky Flats Field Office
Golden, Colorado

REMEDY LANDS SEMI-ANNUAL REPORT - WINTER 1996

INTRODUCTION

This report summarizes the revegetation activities performed on the Remedy Lands (formerly referred to as the Jefferson County Remedy Lands) during the second half of 1995 and planned activities for 1996. The Remedy Land activities are directed by the 1985 Settlement Agreement, McKay versus the Department of Energy (DOE). The Remedy Lands are located on two tracts of land totaling 350 acres in the southern half of Section 7 and the western half of Section 18, Township 2 South, Range 69 West (Figure 1). The open space land within which the Remedy Lands are located was acquired by the City of Westminster in February 1995 from Jefferson County. In previous semi-annual reports the Remedy Lands acreage was referenced as the Jefferson County Remedy Lands. As a result of the transfer of ownership of the subject property to the City of Westminster, the Remedy acreage will be referenced in this report, and in future semi-annual reports, as the Remedy Lands.

BACKGROUND

The Remedy Lands acreage was prescribed as a result of a 1975 lawsuit filed against DOE and its subcontractors by the Church (McKay) plaintiffs and the Great Western Venture partnership. The plaintiffs claimed that their land had been impacted by radioactive contaminants released from Rocky Flats. In December 1984, the plaintiffs and defendants reached a remedy settlement that called for ripping, plowing, and tilling affected soils to reduce plutonium concentrations. The agreement also stipulated that the affected land be transferred to Jefferson County (approximately 250 acres) and the City of Broomfield (approximately 100 acres). The settlement agreement was later amended and finalized in July 1985.

The 1985 Settlement Agreement, as it has since been called, outlined a course of remedial action for portions of land containing plutonium concentrations in surface soils above the Colorado Department of Public Health and Environment (CDPHE) special construction standard (0.9 picocuries per gram - pCi/g). Surface soil contamination was limited to the upper few inches of soil. The remedy involved tilling the contaminated areas in alternate strips to reduce surface plutonium concentrations (through mixing) and stabilizing the areas through revegetation to control wind and water erosion of the soil. The Settlement Agreement states that tilling of the remaining alternate set of strips shall not begin until the initial set of strips are successfully revegetated with native plant species.

In May 1986, Jefferson County requested that remedial actions be undertaken on their land. Remediation activities began in June 1986 on approximately 100 acres of Jefferson County land in Section 7, south of Great Western Reservoir, and in November 1987 on 10 acres in Section 18. To date, the City of Broomfield has not requested their land be remediated. Remediation activities on the 110 acres occurred from 1986 through 1988 with the last partially successful revegetation attempt in April 1988. The remedial efforts conducted on the approximately 110 acres were successful in reducing the plutonium concentrations to below the CDPHE special standard; however, the initial revegetation and stabilization efforts were unsuccessful due primarily to extremely rocky surfaces, intense competition from weeds, and an expanding prairie dog population.

An aggressive revegetation program for the initial set of strips of Jefferson County land was initiated in 1991, which consisted of mechanical mowings to control the growth of weeds, harrowing for seedbed preparation, reseeding, and applying hay mulch as needed over the reseeded areas. Figure 2 and Figure 3 show the locations of the 1991 revegetation activities on the two (north and south) Remedy Land areas. The 1991 revegetation program also included a weed growth monitoring and control plan.

The success of the 1991 revegetation effort was monitored during the spring and early summer of 1992. The monitoring results were presented in the "Jefferson County Remedy Lands Semi-Annual Summer 1992 Report" and indicated that the new seeded species were sparse over the remediated acreage. In addition, undesirable weed species were noted in the previously tilled areas that were expected to be a significant competitor to the more desirable seeded species. Subsequent monitoring results presented in the Remedy Land semi-annual reports for 1992 and 1993 also indicated that weed competition appeared to be a significant limiting factor to successful revegetation of the disturbed Remedy Land areas.

SUMMARY OF RECENT WEED CONTROL ACTIVITIES

A weed control program, consisting of mowing operations to inhibit natural growth cycles/seed production and herbicide application to control specific dominant weed species, was initiated for the affected areas in September 1993. The weed control efforts were developed to create more favorable growth conditions for the revegetated grasses. Initial mowing operations were conducted in September 1993, and the initial herbicide application was performed in June 1994. Four undesirable weed species (Canada Thistle, Musk Thistle, Common Mullen, and Toadflax) were treated in 1994 with an estimated 80-percent effectiveness. No mowing operations were performed in 1994.

A survey of the north and south Remedy Land areas was performed in May 1995 by a contracted weed control specialist to inventory weed species to be considered for herbicidal treatment. Two dominant species were identified for treatment, Canada Thistle and Musk Thistle. Approximately 14 acres of land in the north remedy acreage and 6 acres in the south acreage were significantly populated by these two weed types. Populations of the Common Mullen and Toadflax species previously treated in June 1994 were generally sparse in May 1995.

An herbicide application was performed within the designated areas (approximately 20 acres) on June 20 and June 22, 1995 to reduce the populations of the targeted weed types listed above. The herbicide application was made by tractor spraying using the herbicide Telar. Telar has been approved by the EPA for this type of application and was determined to be most effective and appropriate for the weed species of concern. The herbicide was applied to specific areas using a tractor equipped with independently controlled spray booms. Spray from the booms could be turned on and off as necessary to treat only the areas observed to be significantly populated by the weeds of concern. No mowing activities were conducted in 1995. The site survey previously scheduled in the fall 1995 was postponed until early spring 1996.

The DOE has issued a National Environmental Policy Act (NEPA) Categorical Exclusion Determination (RFO/CX033-92) for the weed control actions as defined in Section D of 10 Code of Federal Regulations 1021. Under this Categorical Exclusion the weed control actions are removed from further NEPA review and documentation due to the relatively benign nature of the actions. The weed control actions were performed under the control of a DOE-approved Site Specific Health and Safety Plan developed specifically for this work and designed to protect the health of the workers and the public.

A plant and animal endangered species survey and a migratory bird survey were performed within the north and south Remedy Land areas prior to the 1994 and 1995 herbicide application events. During the 1994 and 1995 field surveys, a nest known to have previously been used by a nesting pair of Burrowing Owls was observed intact within the north remedy acreage. A flagging line was placed near the nest to mark a protective buffer and boundary beyond which the subcontractor was instructed not to spray. No other endangered plant or animal species were observed within the north and south Remedy Land areas surveyed. No migratory bird nesting activity was observed within or in the vicinity of the surveyed areas.

PLANNED FUTURE ACTIVITIES

The weed control program for the previously tilled areas was planned as a three-year effort, depending on its success. The three-year weed management program ended in October 1995 with a marked improvement in the revegetated areas. A site survey of the previously treated areas will be scheduled in early spring 1996 to determine whether the weed monitoring and control activities should be continued. Representatives with Jefferson County and the City of Westminster are expected to attend. If, during the spring 1996 site-walk, it is determined that the non-desirable weed species have been sufficiently treated, the weed management activities may be terminated.

Future remedial actions on the Remedy Lands are uncertain at this time. As previously reported, in addition to requirements under the Settlement Agreement, DOE is continuing its assessment of offsite area contamination as directed by the Interagency Agreement (IAG) between the DOE, Environmental Protection Agency (EPA), and CDPHE. The offsite areas are identified in the IAG as Operable Unit 3 (OU 3) and include the Remedy Lands property. Surface and subsurface soils in OU 3, including Remedy Lands soils, were sampled to determine the nature and extent of contamination in the soils, and to assess the risk to human health from exposure to the soils. The soil sampling results indicate that the risk to human health from exposure to soils of OU 3, including the Remedy Lands soils, is extremely low and does not warrant the need for remedial action. Based on these results, and the ecological damage caused by tilling, resumption of tilling operations on the remaining strips of land should be reconsidered.

The preliminary soil sampling results for the Remedy Lands were presented to representatives with the City of Westminster, City of Broomfield, and Jefferson County in November 1994. These results are also presented in the Draft OU 3 Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI) report that was submitted to EPA and CDPHE for review and comment in October 1995. Once the RFI/RI report is approved by the regulatory agencies, the soil sampling and human health risk assessment results may be used by the property owners to make an informed decision concerning future actions under the Settlement Agreement, if any, on the Remedy Lands. The Summer 1996 semi-annual Remedy Lands report will provide, if available at the time of publication, information concerning the regulatory agency responses to the findings presented in the RFI/RI report.

FIGURES

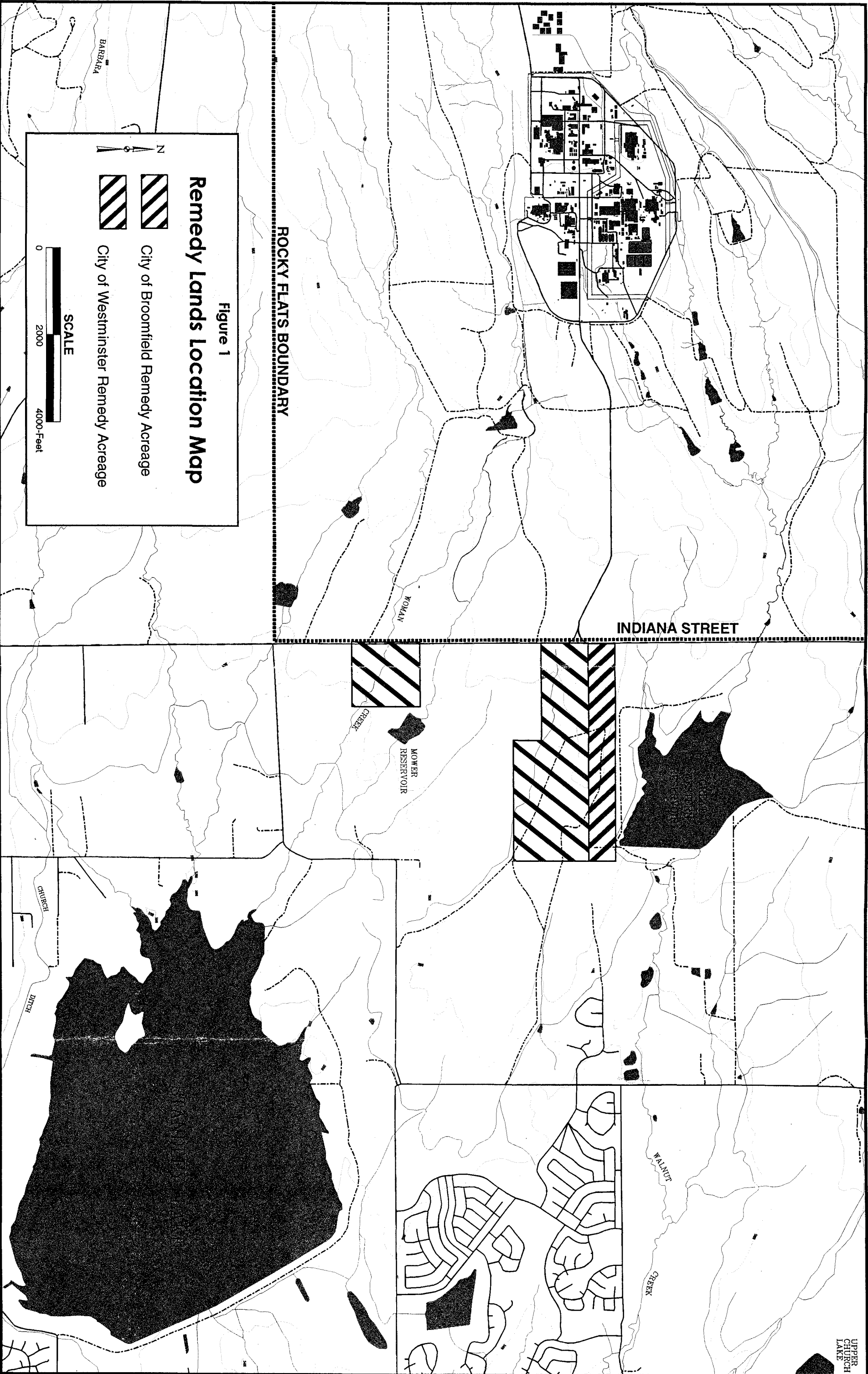


Figure 1

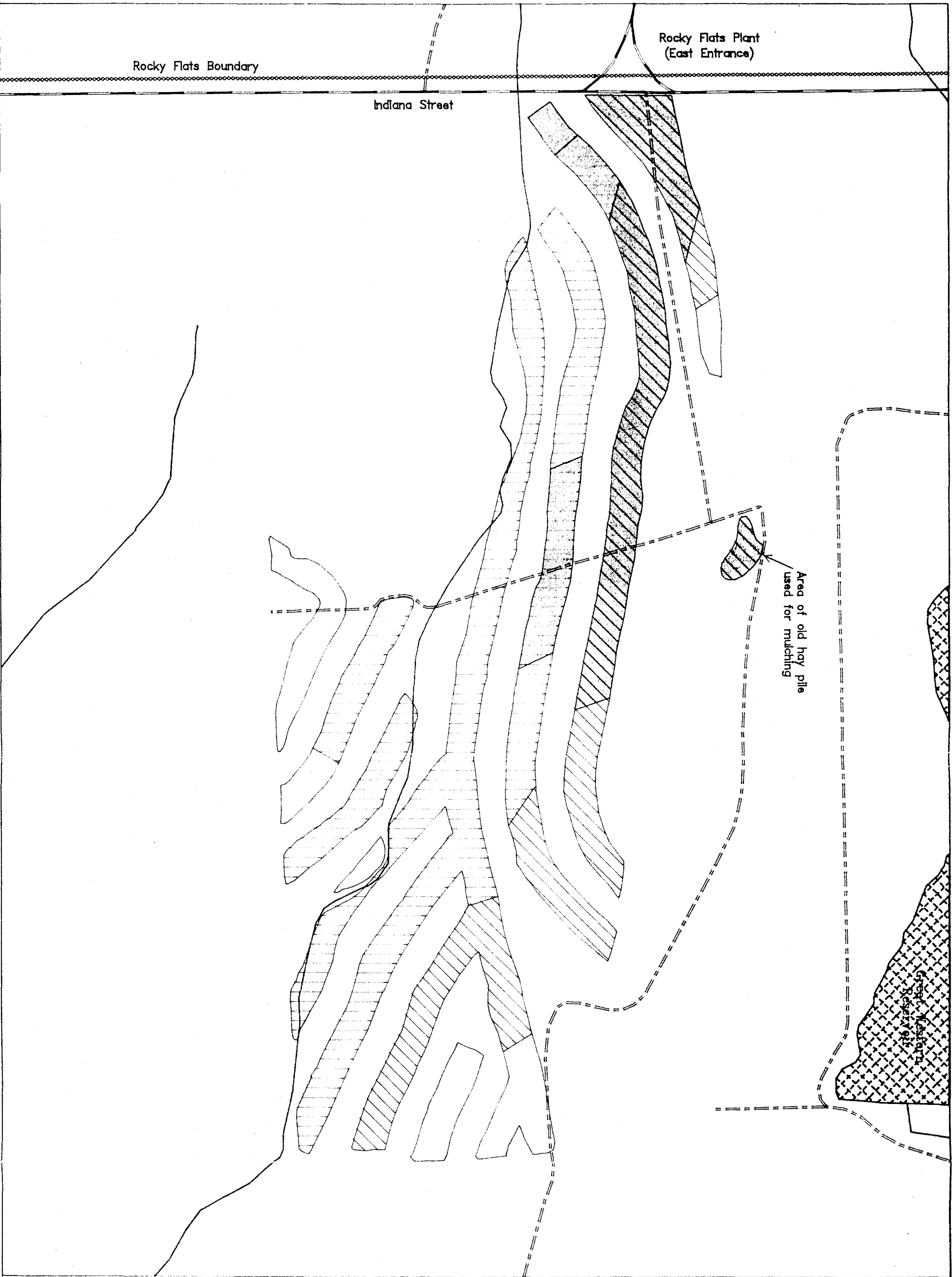


Figure 2
**North Area Map
 of Remedy Lands
 (Section 7)**

Showing Results of
 Summer 1991
 Revegetation Activities

- Streams, ditches, and other drainage features
- Medium duty roads
- Unimproved dirt roads
- Rocky Flats Plant boundary
- Surface water impoundments
- Seeded with clayey foothill seed mixture November, 1991
- Seeded with cobbly foothill seed mixture November, 1991
- Locations where hay mulch was spread December, 1991
- Area not seeded during 1991 (grass species already well established)

